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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/532,406

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Gregory D Plowman

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EXAMINER

YAO, LEI

ART UNIT

PAPER NUMBER

1642

MAIL DATE

DELIVERY MODE

12/23/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/532,406	Applicant(s) PLOWMAN ET AL.	
	Examiner LEI YAO	Art Unit 1642	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 1 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 22 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☒ Claim(s) 1-33 are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

Restriction is required under 35 U.S.C. 121 and 372.

This application contains the following inventions or groups of inventions which are not so linked as to form a single general inventive concept under PCT Rule 13.1.

In accordance with 37 CFR 1.499, applicant is required, in reply to this action, to elect a single invention to which the claims must be restricted.

Group 1, claim(s) 1-25, drawn to a method of identifying a compound modulating a morphogenesis comprising angiogenesis comprising providing MAPK7 polypeptide.

Group 2 claim(s) 1-25, drawn to a method of identifying a compound modulating a morphogenesis comprising angiogenesis comprising providing MAPK7 nucleic acid.

Group 3 claim(s) 26, 28-30, drawn to an in vitro method of modulating branching morphogenesis in a cell comprising contacting the cell with agent that binds a MAPK7 polypeptide.

Group 4, claim(s) 26, 28-30,, drawn to an in vitro method of modulating branching morphogenesis in a cell comprising contacting the cell with agent that binds a MAPK7 nucleic acid.

Group 5, claim(s) 26-30, drawn to an in vivo method of modulating branching morphogenesis in a cell comprising contacting the cell with agent that binds a MAPK7 polypeptide.

Group 6, claim(s) 26-30, drawn to an in vivo method of modulating branching morphogenesis in a cell comprising contacting the cell with agent that binds a MAPK7 nucleic acid.

Group 7, claim(s) 31-33, drawn to a method of diagnosing a disease comprising a cancer comprising the expression of MAPK7.

According to PCT Rule 13.2, unity of invention exists only when the shared same or corresponding technical feature is a contribution over the prior art. The inventions listed as group I and II do not related to s single general invention concept because the lack the same or corresponding special technical feature. The technical feature of group 1 is drawn to a method of identifying a compound modulating a morphogenesis comprising angiogenesis in the presence of MAPK7 peptide , which is shown Hale et al (US Patent 6528509 issued March 2003) to lack novelty or inventive step. Hale et al teach a method of identifying an inhibitor for ERK5 (MAPK7) in the cell proliferation comprised in a morphogenesis. Hale et al., teach an assay of proliferation in the presence of ERK comprising ERK5 and determining whether morphogenesis is modulated by the tested inhibitor as compared to the reference levels (section ERK inhibition cell proliferation assay). Therefore, the invention Group 1 do not make a contribution over the prior art. Because the inventive stop is known in the art the technical feature of the Group 1 is not a special technical feature, the unity of invention comprising the MAPK7 peptide (Group 1) or the MAP7 DNA (group 2) is lacking.

Further, according to PCT rule 13.2, unity of invention exists only when there is a shared same or corresponding special technical feature among the claimed inventions. All rest groupings are directed to in vitro or in vivo modulating the branching morphogenesis in a cell or in a mammal comprising contacting the cell with agent that binds a MAPK7 nucleic acid or peptide, but each group has ad different special technical feature not sheared by the remaining groups. Group 3 and 5 is directed to

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using a peptide of MAPK7, which has the special technical feature of peptide, not shared by any of the remaining groups. Group 4 and 6 is directed to using a DNA of MAPK7 which has the special technical feature of DNA, not sheared by any of the remaining groups. Group 7 is directed to a method of diagnosing a disease comprising a cancer comprising the expression of MAPK7, which has the special technical feature of determining the gene expression, not shared by any of the remaining groups.

Election of Species

This application also contains claims directed to more than one species of the generic invention. These species are deemed to lack unity of invention because they are not so linked as to form a single general inventive concept under PCT Rule 13.1.

The species are as follows:

I. test agent:

small molecule; antibody; nucleic acid; antisense oligomer; PMO.

II. Assay method:

cell proliferation; cell cyclin; apoptosis; tubulogenesis; cell migration; cell sprouting; response to hypoxic conditions

III assay system:

Matrix implant, xenograft, hollow fiber; transgenic tumor.

Applicant is required, in reply to this action, to elect a single test compound from I, to elect one assay method from II, and one assay system from III for prosecution on the merit to which the claims shall be restricted if no generic claim that is finally held to be allowable. For example, elect small molecule, cell proliferation, and matrix implant.

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The reply must also identify the claims readable on the elected species, including any claims subsequently added. An argument that a claim is allowable or that all claims are generic is considered non-responsive unless accompanied by an election.

The species listed above do not relate to a single general inventive concept under PCT Rule 13.1 because, under PCT Rule 13.2, the species lack the same or corresponding special technical features for the following reasons: each test agent has different structure which is prepared or function in different way. The modulating the MAPK by one species, for example, small molecule, may not be performed with antibody.

Upon the allowance of a generic claim, applicant will be entitled to consideration of claims to additional species which are written in dependent form or otherwise include all the limitations of an allowed generic claim as provided by 37 CFR 1.141. If claims are added after the election, applicant must indicate which are readable upon the elected species.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Lei Yao, Ph.D. whose telephone number is 571-272-3112. The examiner can normally be reached on 8am-6.00pm Monday-Thursday.

Any inquiry of a general nature, matching or file papers or relating to the status of this application or proceeding should be directed to Kim Downing for Art Unit 1642 whose telephone number is 571-272-0521

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Larry Helms can be reached on 571-272-0832. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

/Lei Yao, Ph.D./
Examiner, Art Unit 1642

/Larry R. Helms/
Supervisory Patent Examiner, Art Unit 1643